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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,733	06/24/2003	Neal W. Meyer	200208150-1	3294

22879 7590 09/29/2005

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EXAMINER

TALBOT, BRIAN K

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,733

Applicant(s)

MEYER ET AL.

Examiner

Brian K. Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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1. The amendment filed 7/29/05 has been considered and entered. Claims 28-33 have been added. Claims 1-33 remain in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In light of amendment filed 7/29/05, the 35 USC 112 rejections have been withdrawn.

Claim Rejections - 35 USC § 103

4. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruka et al. (5,908,713) in combination with Darland, Jr. et al. (3,423,247).

Ruka et al. (5,908,713) teaches a sintered electrode for solid oxide fuel cells. An underlayer is applied to the electrolyte of a solid oxide fuel cell and dried. An overlayer is applied to the underlayer and dried. Then both layers are sintered to form the electrode layer atop the electrolyte of the fuel cell (see abstract and col. 4, lines 35-50). The overlayer and underlayer are applied by spraying or dipping the slurries comprising suspensions of solid particles of the electrode metal and YSZ. The solvent is removed prior to the electrode being sintered (col. 5, line 45 – col. 6, line 50).

Ruka et al. (5,908,713) in combination with Darland, Jr. et al. (3,423,247) fails to teach when applying multiple layer that one of the particles is smaller than the second particle as well as applying a “monolayer” of particles.

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Darland, Jr. et al. (3,423,247) teaches forming a porous electrode having at least two zones. The electrode is comprised of the two zones whereby the particles in each zone are different in size. The electrode can be used in a fuel cell (col. 1, line 15 – col. 4, line 55 and Figs. 1 and 2). Darland, Jr. et al. (3,423,247) teaches the zone layers being a single layer (col. 3, lines 28-30) or be comprised of multiple single layers (col. 4, lines 30-50).

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Ruka et al. (5,908,713) fuel cell electrode by utilizing different sized particles and applying “monolayers, i.e. single layers” as evidenced by Darland, Jr. et al. (3,423,247) with the advantages associated with their use as detailed in the reference.

Claims 7-9,16-18 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruka et al. (5,908,713) in combination with Darland, Jr. et al. (3,423,247) further in combination with Pham et al. (US 2004/0018298).

Features described above are incorporated here.

Ruka et al. (5,908,713) in combination with Darland, Jr. et al. (3,423,247) fail to teach the substrate being bismuth vanadium or doped ceria and the substrate being porous.

Pham et al. (US 2004/0018298) teaches samarium and gadolinium doped ceria oxides are commonplace in the art in forming ceria based solid oxide fuel cells (Abstract and col. 2 [0025])

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ruka et al. (5,908,713) fuel cell electrode with the materials cited in Pham et al. (US 2004/0018298) with the expectation of achieving similar results.

Response to Amendment

5. Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that the prior art of record fails to teach applying a monolayer of particles.

The Examiner disagrees. As noted above, Darland, Jr. et al. (3,423,247) teaches and depicts multiple single layers of particles that eventually are formed into layers. The reference clearly meets the limitation of applying a "monolayer" as the references teaches applying single layers of particles, i.e. monolayers, and building these layer up to the desired thickness. In addition, the claims are broad enough to read upon applying multiple monolayers which is clearly shown in the references.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B. K. Talbot 9/26/05

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT